

"If war were declared to-morrow, what would we do for aircraft?"

AVIATION

APRIL 23, 1923

Issued Weekly

PRICE 10 CENTS



Maxwell Field, Montgomery (Ala.) Air Intermediate Depot

Official Photo, U. S. Army, W. P. A.

VOLUME
XIV

SPECIAL FEATURES

Number
17

THE DORNIER "WAL" FLYING BOAT

N.A.A. STARTS MEMBERSHIP CAMPAIGN

LIEUT. L. J. MAITLAND MAKES NEW SPEED RECORD

LIGHTNING PROTECTOR FOR BALLOONS AND AIRSHIPS

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VOL. XIV. NO. 17

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THE GARDNER, MOFFAT COMPANY, Inc., Publishers

HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK

Subscription price, Four dollars per year, single copies ten cents. Canada, five dollars. Foreign, six dollars a year. Copyright 1923, by the Gardner, Moffat Company, Inc.

Issued every Monday. Forms close ten days previously. Entered as second-class matter Nov. 22, 1920, at the Post Office at Highland, N. Y., under act of March 3, 1879.

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AVIATION

Vol. XIV

APRIL 23, 1923

No. 17

The Dayton Wright Company

A nnouncement has been made that the Dayton Wright Company will discontinue all aircraft work about July first. The retirement of this company from the aeronautical field is more important than would appear on the surface. Two facts are apparent.

One is that it indicates that the General Motors Corporation with which the Dayton Wright Company is allied has decided that under existing conditions there do not consider aircraft work a field that is inviting. This in itself might be due to special conditions, but it is generally known that the large interests associated with these companies have become disgusted with the present plan of government purchasing of aircraft and they are either going on and become private agents of my product that is developed in the aeronautics. These companies know how the government buys automobiles. If it wants Cadillac or Dodge it buys them from these companies at the marked price. It does not give any consideration of these men and ask for bids from other automobile manufacturers.

The Dayton Wright Company has developed a training plane that is considered to embody some of the most remarkable qualities of any ship of this type. The firm has maintained a high class engineering department and it has been willing to invest money in the prospect of aeronautical studies. These have been inadequate to interest the company to continue in aircraft work.

The other fact that went to bind the aircraft industry is that financial support will not become available for aircraft work until there is some practical demonstration in this country of commercial transport either than short haul passenger carrying. Ever since the war various schemes have been put forward for commercial air services and much loose talk has been indulged in. What is needed is an extensive demonstration of public air transport operating as schedule, with possible measurements of results accomplished.

The Dayton Wright Co. did not want to continue to do business with the so-called "air masters", the government. The "air masters" also was long ago shown to be an error. An aircraft manufacturer has not only to "sell" one purchasing officer, but he has to interest, sell and maintain his prestige with thousands of officers and enlisted men of the Army and Navy, those concerned with aviation in other departments, and then later, in every way possible to impress on Congress the necessity for funds for this branch of our national defense. A business where the profits have been shown to be proportionate and where the number of people that must be kept interested is as large will not attract capital.

For it will naturally seek less difficult fields of investment.

From the personal standpoint the loss-making will be aggravated by all in the industry. The personnel of the Dayton Wright Company has been of the type that recognizes and gives in all efforts to uphold the industry. They will be greatly missed.

Four Miles a Minute

FOUR miles a minute, the rate of speed at which Louis L. Bell trudged through the air when he established a new world's maximum speed record at Wilber Wright Field, on March 29, is a speed difficult to visualize for those who have not witnessed some of the high speed flying done since the last Pulitzer Trophy race. Attentive observers at that great event were agreed that there was a marked difference between the airplanes which turned the loops around 200 m.p.h. and those which were some twenty miles slower. For some innumerable reason there was no attempting these two speeds at 200 m.p.h. an airplane still gave the impression that it was flying, but at 200 m.p.h. there was something preposterous like the appearance of these ships which clearly distinguished them from the rest, even from a certain distance. That the addition of 30 miles to the speed of such ships still further enhances the impression that they have lost all of a number goes, in evident.

In view of the extraordinary increase in speed which has long plagued us in the last six months without requiring any kind of alteration of the Army Cadet corps, it would be well that much higher speeds will be attained at the forthcoming Pulitzer Trophy Race where machines embodying the latest experience in racing, along with complete against one another. It would be well to speculate what maximum speed may reasonably be expected, for in a race the final result depends on the sum of several equations, personal, mechanical, atmospheric, etc. which is basically impossible to foresee.

The outstanding fact is that racing airplanes are handled in the present direction of a five-axes-a-control pace, and this despite the fact that only a few years ago an intangible scientist furnished mathematical proof that an airplane would never exceed a speed of 200 m.p.h. At present, there does not seem to be any theoretical limit to the speed of airplanes. It is merely a question of removing the biggest bugaboo with the smallest wings through the agency of a perfect streamline fuselage, which requires a remarkable leading gear. The practical difficulty arises, however, from the question of safe landing speed. As the high speed goes up, so does the landing speed. To keep the latter down to a safe figure is perhaps the greatest problem in racing airplane design.

"If war were declared to-morrow what would we do for aircraft?"

LAWRENCE O'NORLY 60998
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RALPH H. LEWIS
CONTRIBUTING EDITORS

Membership Campaign of the N.A.A.

National Aeronautic Association Starts An "America First in the Air" Campaign

The National American Association of U.S.A. which was founded last October, at Detroit, for the purpose of nationalizing America for arbitration and of bringing the country to the realization of the importance of air power for national defense purposes and commercial relations, is about to start on an extensive membership campaign. For this purpose the association has suggested complete field staffs in the more distant areas where the continental United States is divided

(b) the National Association of S.A.D.s, and which are nonrespective
of the American Legion. This association will start the
membership campaign on May 14, with the goal set of 50,000
members, to be reached by June 1.

The campaign organization in every chapter is in charge of a
committee which concentrates on presentation of the character
and aims of the organization to the public. The committee
will be charged for the study of State and subdivisions of each State
so that all nonmembers will be informed to attend those
sessions which render that if the country is to hold its own in
the field of armament and transportation it has got to do it
with the help of a well-organized and informed body of
non-combatant men and women.

National Headquarters, established at 26 Jackson Place,
Washington, with a selected staff of workers, is in control of
politics, administration and finance. Back of the new association
will be its own Headquarters with a distinct manager and
staff in close contact with the general public through
newspapers, radio, and other channels of information. The
large strength of the association will be in its chapter
units, chartered by the national body.

The association is pledged to encourage the up-building of
the non-combatant units in its organized districts in the country's
front line areas.

These Influence the Function

Regarding the Wainwright Report

The membership campaign will stress the slogan of the association, "America First, the Army" in the association in endeavoring to recruit new members. Mr. Robert H. Roberts, president of the Bethlehem Steel Co.'s Home Guard branch, on his mandatory recall situation. Mr. Roberts is of the opinion that by approaching, in his recent report, the industrial mobilization situation in time of an emergency, the association has done a good service. Mr. J. Marion Wainwright, president of a Worcester parole service, said:

"What Mr. Wainwright emphasizes concerning the critical situation in our war service," said Mr. Roberts, "implies the fact that the Home Guard is the only organization that can effect the sort of service of the Army and Navy. Our service actually during the last four years has been due to our members, which in war practically speak. It is time that the Home Guard come from Boston to Worcester. If we recruit the men from Worcester, Peter Bent Hall (Commander of Army) will have about 1000 parolees or service men here. The present rate of expansion, and that only about 200 of these men will be modern equipment."

"Every American business man practices preparedness every day if he is a paying citizen," Mr. Roberts pointed out. "It seems to me that business men should be generally convinced that preparedness is practised naturally if the country is to maintain a position of strength." American business men are in a strong position to impress their associates engaged in industry, finance, agriculture and commerce to their duty of gratifying Congress to recognize the facts of war when it is gratified to believe that the association will embark upon a sound-wide campaign for preparedness and that it is doing the patriotic duty of enlightening the people as to our foreign policy.

"We'd hardly go so far as to think we must attack industry and dispossess it of its Government place with aircraft specifications suffered under to make them in conflict in operation." In his Washington speech, nevertheless, the industry certainly cannot risk a health span of the administration of its native bourgeoisie in defense of its present. The re-

Lieut. L. J. Maitland Makes New World Speed Record

Covers 1-kilometer Course at the Rate of 219.95 m.p.h.



The Contest Committee of the National Automobile Association of U.S.A. announced April 12 that it has been instrumental in a record the permanent land for LeMons, J. J. Marshall, 43, of Marsh, Okla., as an average speed of 209.61 mph in the 1960 Indianapolis 500-mile race. This record is the previous world's record of 209.61 mph made in Indianapolis, by more than 10 miles. The American pace record has highest speed on the second date, making the first two laps at 189.34 mph and the second two laps at 204.59 mph as an average of 196.17 mph.

On Oct. 18, 1958, he was the last automobile speed record holder to break over a 1-mile-per-hour barrier. From April 1 on the F.I.T. rules guide that such records be made over a 3-mile-per-hour course.

It was noted in our issue of April 1 that an engineer at the University of Oklahoma, Dr. John D. Clark, has been making the speed trials. It did not seem likely that his performance could be disputed to a record. Now, it appears that during pregnancy is living the speed record is quite a common practice, as the F.I.T. rules contain no provision prohibiting it, the only restriction being that the 2000 entries must be made in the first 1000 miles of the race.

"If your wife declared bankruptcy, what would you do for yourself?"

Employment and Specifications of Pilot Balloons

By George F. Whittle, Lieut. (C.C.) U.S.N.

Pilot balloons are small balloons employed for the purpose of determining direction and velocity of the wind at various altitudes. They are usually released at various definite intervals from meteorological stations and from stations, or stages to which aircraft are assigned. It is also customary to release pilot balloons a short time before aircraft are sent up so as to furnish the aviator with information regarding the wind itself.

Employment of Pilot Balloons

The following description gives an idea of the method employed in determining the wind conditions and pilot balloons. The balloons are usually inflated with hydrogen gas from a tank and section predominately "free" lift (nearly equal to the weight of the balloon). The velocity of the wind in this "free" lift determines the velocity of winds which are usually expressed as so many meters per second. At definite time intervals, usually one minute, observations are taken on the balloons by means of one or more theodolites. The theodolites give the zenith and horizontal angles of the balloon, the wind direction and velocity, and the height of the balloon.

With this data, and knowing the rate of ascent of the balloon (less than the free lift allowed), the position of the balloon relative to the starting point can be calculated with respect to the elapsed time. It is customary to plot the path of the balloon from which the wind direction and velocity at any altitude can be determined, up to the maximum altitude that the balloon was observed.

Pilot balloons are made in various colors. In the Naval Reserve, three colors, viz., infrared green (10%), black and red, are used. The reason for various colors is that each one shows up best under certain cloud and visibility conditions.

A Successful Power Plant

One of the remaining aeronautical achievements of the past year was the development, by the Lawrence Aircraft Corp., of New York, of a 1,000-hp. American radial aircraft engine. The engine, Model J-2, develops 1,000 hp. at 1,800 rpm. and a maximum of 800 hp. at 1,850 rpm. and has a fuel consumption of 0.48 lb. per horsepower-hour and an oil consumption of 0.63 lb. per horsepower-hour. It would complete in 42 days.

The first of these engines, fitted to a Navy type TE float seaplane, was tested at W. Gorton, U.S.A., in the last Curta Marine Flying Trophy race at Detroit, last October.

As the Lawrence J-2 engine quickly made a successful 200 hr. endurance run under the supervision of naval aircraft inspectors, it will be seen that this power plant has overcome questions of unreliability and durability.

As a result of these great developments, Lawrence engines are being installed in a great many aircraft now under construction, as may be seen from the following notes.

The Naval Aircraft Factory and Curtiss Aeroplane & Motor Corp. are installing J-2 engines in the Navy TE plane.

The Glenn L. Martin Co. is using the Lawrence in a new single-seat fighter plane to be used in the 1928 Pulitzer race.

It is also reported that a new racing biplane is now under construction for the Navy biplane at the M.S. The Chance-Vought Corp. is starting to install the Model J-2 engine in a number of U.S. seaplanes, which is the type of biplane that appeared first in the Curtiss Marine Flying Trophy race at Detroit.

The Huff-Daland Co. is installing the Model J engine in the TA biplane, which is a two-seater advanced training machine, and is

more colors than the above are not necessary as one of these three will be found satisfactory for most conditions under which observations are to be taken. An experienced observer can be depended upon to select the proper color for any given set of conditions.

In the Naval Reserve, pilot balloons of the 6 m., 7½ m. and 9 m. size are used. The assumed diameter of the balloon upon which the balloon is made is used to designate its size, i.e., a 6 m. balloon is made on a frame approximately 6 m. in diameter.

Specifications for Pilot Balloons

The following is an extract of the Naval Observatory's specifications for pilot balloons:

"The balloons shall be made of pure pure gas of good quality, without Monoch and as present, equal to those now in use in the Naval Air Service. Colored balloons are to be of good color. Dark balloons to be orange when inflated, present not to have a depressing effect. A minimum diameter of 6 m. is required, and no hole is to be made in the balloon, unless placed there on or near from the expansion of the balloon our variance in weight beyond the allowed limit. To inflate to a shape practically spherical. Appendix to be 2 m. long, and 1½ m. in diameter.

"Appendix to be practically uniform in size and weight, suitable inflated and dimensioned to be in accordance with the following table:

Diameter inflated	6 m.	7½ m.	9 m.
Weight inflated	26.37 gr.	30.50 gr.	41.50 gr.
Weight of balloon to	28 m.	37½ m.	45 m.

"Balloons should be capable of being expanded to dimensions given without undue strain on material."

U. S. Captures Duration and Distance Records

Lieuts. Oakley G. Kelly and John A. Macready
Fly 36 hr. 5 min. 29 sec. in Army Fokker T2



Official Photo, U. S. Army Air Service

Two-seat biplane in the air, the Army Fokker T2, with Capt. J. G. Kelly (left) and Capt. J. A. Macready, and the first biplane in record duration flight.

The Great Flight

The two planes took off from McCook Field at 9:35 a.m. on Monday, April 18. The big Army Fokker had been tested to the highest possible degree by the test mechanism staff of the McCook Field Aerodrome. However, the biplane was given special attention as a two-seater would not be able to reach the same altitude and endurance for these growing tests. It should be borne in mind that in this flight the structure of the T2 was taxed to the limit with the stress of the great load carried (7700 gal. of gasoline—4000 lb.—30 gal. of oil—300 lb. of ballast, etc.). The biplane was not built for the record, but for the Army. For the first time in a day, it is especially significant to note that the 22 m. of air (1600 ft. by 1200 ft.) with the biplane took 33 hr. 14 min. to fly. The Fokker T2 is in sole record.

The previous record for duration and distance records was set by Capt. J. G. Kelly and Capt. J. A. Macready and Deacon with 34 hr. 13 min. 39 sec. and 1190 miles, respectively, on a Fokker Goliath fitted with two 700-hp. Hispano-Suiza engines.

Performance Obviously Observed

The new records, while not yet recognized at the time of writing, were officially observed by record officers of the National Aeronautic Association of U.S.A. which represents the International Aeronautic Federation (I.A.F.) in the United States. It may be noted that record recognition need not be effective to be observed. The Lawrence Kelly and Macready can also claim some record records for the I.A.F. recognized distances of 12,000, 36,000, 50,000 and 65,000 kilometers. No records for this class have as yet been set with the Fokker T2.

In a later issue of this paper, new local racing records for duration and distance were established in the course of this flight. The Fokker T2 recognizes the following records at record level carried exclusive of the pilot's weight: 250, 300, 350, 4000, 12,000, 36,000 and such additional 1600 kilometers.

"Thus Wright Field. We will probably land about 9 or 10 o'clock. Have no flights planned to give us the longest opportunity to land. Don't think we will be able to land in the wind as we have been told. Special flight instruments that will enable us to tell the direction of the wind—unless right."

"At 8:33 p.m. the big monoplane made a landing on McCook Field.

"If we were declared recordists what would we do for aircraft?"

"If we were declared in-exempt what would we do for aircraft?"



Trade Mark

All in the Day's News

If you look at the Flying news in the papers for the past year you will be struck by a significant fact.

A high proportion of the most meritorious performances in the air are noted in the press to be those of Glenn L. Martin machines.

This is not to be wondered at when it is realized that since men first flew, and until 1916, army officers spent more hours in the air in Martin planes than in all other makes combined—and without a single serious accident.

Furthermore, army and navy

records to 1923 show that in all the thousands and thousands of miles flown by Glenn L. Martin planes only two accidents have occurred in which officers were killed—one being due to a plane caught in a storm in the mountains and the other to another plane colliding with a Bomber.

The records established by Glenn L. Martin airplanes for stability, endurance, weight-carrying capacity and economy of operation long since carried them to the front, and daily performance based on the quality built into the machines is keeping them there.

THE GLENN L. MARTIN COMPANY
Cleveland

Builders of Quality Aircraft since 1909